



Review Article

Drug Abuse and Illicit Drug Trafficking Vis-A-Vis Human Life – A Review

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Abstract

Use of drug is as old as age of human. Drugs as medicine are meant to help sick people, but in drug abuse, people use drugs to alter their brain function in harmful and dangerous ways. Drug abuse is now become an emerging health hazard for the common man who is living in the country with population blast. Drug abuse means any use of drugs that causes physical, psychological, legal or social harm to the user or to others who are affected by the drug user's behavior. India has a long and prosperous history of cultivation, production and use of drugs, particularly traditional and age old use of locally produced plant based natural drugs like opium and cannabis. In present article, historical aspect of drug abuse, current trends in drug abuse and illicit trafficking, risk factors of drug abuse and involvement of youth, preventive measures to be used had been discussed.

Keywords: Drug abuse; Illicit drug trafficking; Human life

Introduction

Use of drug is as old as age of human. Drugs have been used for a range of reasons in diverse cultures; for religious purposes, for entertaining purposes, for altering the states of consciousness, as a matter of proud and for obtaining relief from pain, sadness and distress [1]. Drugs as medicine are meant to help sick people, but in drug abuse, people use drugs to alter their brain function in harmful and dangerous ways. In India, drug use, illicit drug trafficking and associated problems are of major interest and concern as they are increasing day by day, but the research and genuine data on the awareness, interest and concern with respect to drug use has received less attention. Drug abuse is now become an emerging health hazard for the common man who is living in the country with population blast. Nowadays in developing country like India, drug abuse and illicit drug trafficking are real threats to society [2]. The younger generation is being targeted by advertisements of different harmful drugs and products which portray the usage of drugs as gorgeous and

funny. A World Health Organization (WHO) study report on youth and drugs stated that, young people who first try drugs on an experimental basis or just for taste often get motivated largely by curiosity and peer pressure which ends up as abuse [3]. Young people, children and adults have been involved in drugs, their illicit trafficking and their hazards as per the narcotic drug division of United Nation [4].

What is Drug Abuse?

As per International Convention of 1961 for Narcotic Drugs, and International Convention of 1971 for psychotropic substances, drugs are defined as all substances and chemicals that should not be used for any purpose other than for medical and scientific research. If used for purposes otherwise, they are called illicit drugs [5].

Drug abuse is defined as a maladaptive pattern of substance use leading to clinically major, impairment or suffering as manifested by one or more of the following occurring within 12 months period: frequent substance use resulting in the failure to fulfill major roles like obligations at work, school or in the home; recurrent substance use in situation in which it is physically dangerous; for example driving vehicle under the influence of substances use; recurrent substance related legal problems and constant substance use in spite of persistent social, moral and interpersonal problems [6]. Hence, drug dependence is based on three or more of the following criteria; a strong craving or compulsion to take the drug, subjective consciousness of impairment in ones capacity to manage the use of the drug, substance use to reduce withdrawal symptoms, withdrawal state, evidence of tolerance, a narrowing of the personal range of pattern of drug use and progressive neglect of different ways of happiness and persisting with drug used [6].

Drug abuse means any use of drugs that causes physical, psychological, legal or social harm to the user or to others who are affected by the drug user's behavior. People have experienced the positive consequences as well as negative consequences of drug abuse, which the definition of drug abuse has captured [7].

Historical Aspects

India has a long and prosperous history of cultivation, production and use of drugs, particularly traditional and age old use of locally produced plant based natural drugs like opium and cannabis [8-12]. Opium cultivation and use in India appears to have been linked with the coming of the Arabs and Persians to India long time before [10]. The earliest mention of opium cultivation in India was found in 1516, in a letter to King Manuel of Portugal by a Portuguese historian named Pyres [10,11]. However, opium cultivation had thrived during the British colonial rule before independence [8- 11,13].

Opium was used not only as a pleasurable substance but also as very important self-administered household remedy for range of illnesses, i.e., diarrhoea, dysentery, chills, malarial attacks, asthma, chronic coughs, and rheumatic pains etc. [9-11,13] It was also administered to the infant in wrong belief that it will keep them quiet, calm and healthy [10,11]. As per Mahabharata, Lord Krishna was tried to be poisoned by evil Putna by applying opium on her nipple. In 1813, the first Indian regulation on opium consumption was introduced and later in 1878, all India Opium Act permitted only licensed vendors to cultivate and sell opium to registered users [13].

The cannabis similarly had a long history and widely used in India and often not perceived as a drug [12-16]. It was a traditional crop produced in some selected North western districts of India [8,12,17,18]. Cannabis had been widely used by religious ascetics i.e., sadhus and fakirs for thousands of years considering it as a holy plant which bring their association with God [12,19]. Customs of some form of cannabis use incorporated in different social and religious festivals like consumption of bhang on occasion of Mahashivaratri was believed to be originated in India [19].

Beside opium and cannabis, alcohol in many forms had been used in different socio-cultural and religious functions particularly among indigenous communities in pure or impure form. [8,12] Many of tribal people in the country still produce and consume alcohol traditionally which is more dangerous [8,12]. There is no legal ban on alcohol except in Gujarat and few states of North east India and no social and religious ban on any community on consuming alcohol except the Muslims [12].

Until 1980s, the common drug of abuse was locally produced alcohol, cannabis and sedative tablets like mandrax (methaqualone) and prodorm (cyclobarbital) [12,15,16]. In early 1980, drug using pattern had undergone a shift; codeine based prescription of cough syrup became popular drug of abuse which was easily available [8,15]. Around mid to late 1980s, heroin addiction was first reported and it became a major drug of abuse and new trend setter [8,15,16]. The major source of this low potency heroin was India, usually called "brown sugar" and it became the drug of choice especially among users of lower socioeconomic strata and business of illicit trafficking [8,15,16].

In early 1990, among the drug users, heroin addiction was the major cause for seeking treatment, followed by Pethidine [16,20,21]. Injection of pethidine and morphine was then commonly accepted as mode of abuse [20]. Abuse of heroin in India mostly confined to via route of smoking and inhaling [17,22,23]. Data collected from some urban treatment centres in mid 1990s showed although predominant but a drop in heroin with increasing number of injecting drug users [21,24,25]. In mid to late 1990s, it was also reported both increase in number of drug users as well as type of drugs being used via different routes [21,24]. Injecting of illicit drugs in India is believed to be started around 1990 [22,26].

This drop of heroin use in mid 1990s was attributed to the reduction of supply and consequent increased of price resulted from law enforcement efforts curtailing supply of heroin across the border and preventing illicit trafficking [16,22]. This situation however led many drug users turning towards other drugs like buprenorphine [16,22,23,27]. Buprenorphine, a synthetic opioid analgesic became popular among injecting drug users in the country by mid 1990s [22,23,26,28]. By mid to late 1990s, many drug treatment centres had reported buprenorphine dependent users, especially young generation [16,22,26,28].

Risk Factors of Drug Abuse

Every life has an end on one day by natural or unnatural means. Death due to drug abuse or its illicit use leaves a bad taste in society [29]. Drug abuse is a complex phenomenon which has various social, moral, cultural, biological, geographical, historical and economic aspects. The breakdown of the old combined family system, the lack of parental care in current families where both the parents are working and the demur of old religious and ethical values, neglect of child and

abuse of electronic and print media have led to a increase in the number of drug addicts who have taken to drugs to run away the hard realities of life. This has also led to a boost in the crime rate. The drug addicts go for crime to pay for their drugs and achieve pleasure of life which in turn is progress towards end of life. The early beginning of substance use is usually associated with a poor prognosis and a lifelong pattern of dishonesty, crime and reckless behavior [30].

With most of the drug users being in the productive age group of 18 to 35 years, the loss in terms of human potential is immeasurable. Adolescent drug abuse is one of the major concerns in young people's behaviour in current trend. Increase in the incidences of HIV, hepatitis B and C and tuberculosis due to drug addiction by sharing contaminated needle adds to the reservoir of infection in the community, burdening the health system in major way. The consequences of drug abuse include domestic violence and financial burden. At the national level, drug abuse is intrinsically linked with racketeering, crime, conspiracy, corruption, illegal money transfers, terrorism and violence, threatening the very stability of the governments. Drug abuse is emerged as public hazard and dangerous threat to human life [30].

Prevention of substance abuse among adolescents requires awareness of characteristics that place youth at risk and targeting risk factors that are modifiable and preventable. Many studies have attempted to identify risk factors associated with adolescent drug and alcohol usage which can be helpful to cope up with this situation.

In its 2010 report titled "Preventing Drug Use among Children and Adolescents", National Institute of Drug Abuse (NIDA) listed several factors that can enhance or mitigate adolescent risk for initiating or continuing to abuse drugs. These factors include exposure to drugs, socio-economic status, and quality of parenting, peer group influence, easy availability, wrong message by television and media and biological/inherent predisposition towards drug addiction [31]. A retrospective study by *Dube et al.*, [32] measured correlations between the number of adverse childhood experiences (ACEs) and future substance abuse behavior. Adverse childhood experiences included abuse (physical, mental, emotional or sexual), neglect (physical or emotional); growing up with household substance abuse, criminality of household members, mental illness among household members, and parental discord and illicit drug use by parents. The study specifically compared the number of ACEs resulting in a greater likelihood of drug use initiation under 14 years of age and also compared the number of ACEs associated with increased risk of developing addiction. The study demonstrated that each additional ACE increased the likelihood for drug use under 14 years of age by two to fourfold and raised the risk of later addiction by five times. People with five or more ACEs were seven to ten times more likely to report illicit drug use than those with none [32,33].

Hawkins et al., [33] also reviewed many studies that attempted to identify risk factors for adolescent drug abuse. They discussed specific risk factors occurring at the societal/community level and at the individual level also. Among societal risk factors, the following were identified: laws and norms favorable toward behavior (including lower minimum drinking ages) and availability. Interestingly, socio-economic status did not seem to correlate with increased risk of drug abuse among adolescents; it was only in cases of extreme poverty in conjunction with childhood behavioral problems where increased risk was observed. The personal characteristics that positively correlated with drug and alcohol abuse are numerous and include low harm avoidance, poor impulse control, and parents with a history of

alcoholism and drug abuse, high levels of family conflict, lack of and/or inconsistent parental discipline, history of academic or love failure and a history of antisocial and aggressive behavior [33].

Being aware of these risk factors one can assist families, health professionals, schools and other community workers with identifying at risk children and youth and help in reducing or eliminating risk factors through prevention and treatment programs.

Drug Abuse and Adolescents

Drug related behavior are usually associated with peer culture, as children learn from and copy the friends they akin to and respect. Wanting to be striking to others becomes very important in adolescence, and this factor is significant in the development of drinking disorders, alcohol consumption, tobacco and drug use, tanning, not practicing safe sex, and vulnerability to injury, among other behavior. These adolescent who get occupied in such hazardous actions often have high levels of argument with their parents and meagre self control, telling that they employ in such behavior to handle a stressful life. Adolescents who abused substances typically perform more weakly in school, and family trouble, deviance, and little self respect appear to make clear this relationship. Parents and peers persuade adolescent drinking by influencing approach about alcohol and by acting as role models [34]. On the other hand, parental deficiency due to deaths, divorces, separation or dispute has also been powerfully associated with drug abuse [35].

Some people are mainly susceptible to substance abuse. They comprise the abused or neglected youths, the homeless, the physically or mentally handicapped, school drop outs, children of substance abusers, street children and the economically disadvantaged [36] but generally, adolescents are faultily misinformed about smoking. A study of 895 urban adolescents assessed attitudes and beliefs about smoking and found that most were poorly informed about the prevalence and risks of this practice [34]. Perhaps most significantly, these misperceptions were most common among adolescents who had already begun to smoke, who had friends or family members who smoke, or who intended to start smoking in the future. These points argue significantly against the tobacco industry's claim that smoking is an informed choice and, rather, suggest that an adolescent's decision to smoke may be based on considerable misinformation and poor assessments of personal risk [35]. In the same study, peer influence, social pressure, smoking parents and lower class were found to be other important factors in beginning smoking in adolescents [37].

Drug Abuse and Current Trends

In the United States, most college students drink alcohol, and as many as 15-25% of them are heavy drinkers [6]. The prevalence of alcohol abuse is on the increase as college women begin to drink as heavily as college men. Occasionally, binge drinking may involve as many as 43% of students while many college students do not see drinking as a problem [34]. It has also been noted that smoking begins early. The Centres for Disease Control [34] indicated that more than 15% of the adolescent population between the ages of 12-18 years already smoked cigarette regularly and considers themselves as smokers. It had been found out that 95% of regular smokers start to smoke during adolescence, and the question arise whether these young people have correct information before taking the judgment to begin [34]. This trend is very dangerous for future of mankind.

In a recent survey which was conducted by the Associated Chambers of Commerce and the Industry of India revealed that a majority of the pub customers were in the age group 20-45 years and that they spent an average of 500 to 1000 rupees per person [38]. 73.5% of the total youth of Punjab alone is addicted to drugs [39]. Above details really deserve prompt action for the same to control.

Alcohol, tobacco and other drugs which include club drugs, marijuana, cocaine, and heroin are the most commonly abused drugs. Throughout the 1990s and 2000s, the popularity of a group of substances which were collectively referred to as "club drugs", has been steadily growing. This term describes the drugs which are used by young adults at all night dance parties such as "raves" and "trances" and at dance clubs and dance bars. These drugs can cause serious health problems and in some cases, even sexual offences and death. Some of the club drugs are Methylepedoxymethamphetamine (street name is Ecstasy, Adam lover's Speed), Gamma hydroxybutyrate (Liquid Ecstasy), Ketamine (Special K, Vitamin K), Flunitrazepam (Forget -Me Pill), Methamphetamine (Speed, Ice, Chalk) and Lysergic acid diethylamide (Boomers, Purple Haze) [1].

The 2009-2010 estimate of England showed that 40.7% of young adults who were aged 16-24 years used illicit drugs. One in five young people had used one or more illicit drugs in the previous year (20.0%) and around one in nine had used drugs in the previous month (11.6%). In the same study, it was found that less than 10% of the pupils thought that it was 'OK' to try illicit drugs once a week [1].

Studies which were conducted in different parts showed that the knowledge regarding the harmful effects of substances was high, particularly about illicit ones such as tobacco, alcohol and other drugs [40-45]. A low prevalence rate of tobacco use was observed in one study [42], whereas in few other studies, the prevalence rates were higher [46]. In studies which were conducted by other authors [47-49], males were found to be more likely than females to use all types of tobacco products.

A survey on the knowledge, attitude and opinion on substance use revealed that the knowledge on this was more among the rural students [46], but contradictory results were found in a study which was conducted in Kenya [50]. Students from the rural background were found to have less knowledge towards alcohol and tobacco but better knowledge about other drugs as per the studies which were done by other authors [51].

The abuse of alcohol and illicit and prescription drugs continues to be a major health problem internationally. The United Nations Office on Drugs and Crime (UNODC) reported that approximately 5% of the world's population used an illicit drug in 2010 and 27 million people, or 0.6% of the worlds adult population, can be classified as problem drug users. It is estimated that alcohol abuse results in 2.5 million deaths per year and that heroin, cocaine and other drugs are responsible for 0.1 to 0.2 million deaths per year. In addition to causing death, substance abuse is also responsible for significant morbidity and the treatment of drug addiction creates a tremendous burden on society. UNODC estimates that worldwide costs related to treating drug abuse total \$200-\$250 billion, or 0.3-0.4% of global GDP; additionally, it is estimated that only 20% of drug users received treatment for their dependence in 2010 [52,53].

Some studies have found a high correlation between adolescent abuse and becoming a problem drug user in adulthood [53]; therefore, it can be inferred that many problem drug users start abusing drugs at an early age. Additionally, accidental and intentional fatalities that are

associated with drug and alcohol use represent one of the leading preventable causes of death for the 15 to 24 years old population. Alcohol and other drug use in the adolescent population carries a high risk for school underachievement, delinquency, teenage pregnancy, and depression [53].

Illicit Drug Trafficking and Current Indian Scenario

Different socio-economical factors like poverty, joblessness, and socio-political disturbances favor spread of drug use [54]. India is one of the poorest countries with population explosion in the world [55]. Use of needy women and children in drug trafficking from the border to city areas has been reported [8,56]. Most of the slum dwellers are chronically under employed [57,58]. Many of these slums are also being used by the drug traffickers as the major drug storage and selling points across the country [56,59,60]. Drug traffickers recruit youths, including women and street children from these economically disadvantaged groups as drug peddlers [8,56,60-63].

The vulnerability of India to drug trafficking and use is further enhanced by its' geographical location and porous border with Bangladesh, Nepal and Pakistan [8,9,56,57,64,65]. Moreover due its position among Golden Crescent in the west, Golden triangle in the east and golden wedge in the north, India is being used as a transit point for trafficking heroin [8,17,56,65,66]. Report of wide spread corruption at the various levels of different organization and in coordination among agencies from the centre to peripheral levels made India an attractive transit point for narcotics [8,65]. Moreover all the counter-narcotic agencies in India are severely under-resourced and lack adequate trained man power [8,65].

Tobacco use is universal among the users [67,68]. Many recent surveys indicated that heroin is the most commonly cited main drug of abuse [67,69,70]. However heroin users and intravenous drug users (IDUs) across the country have also revealed that lifetime experience of using multiple drugs like, cannabis (90-95%) and alcohol (70 to 84%) [22-24,67-70]. Codeine, which is the most visible of illicit drugs also consume by 50 to 60% the current heroin smokers and IDUs at least once in their life time [8,27]. Multiple drugs are usually used along with the main rug of abuse [68,69]. Use of sedative tablets is also common among the users [67,68] before switching to injectable drugs [67].

The unavailability of heroin and low cost of injectable drugs are mentioned by many users as main reasons for switching to injecting drugs [16,22,27,28]. However several other factors were also reported that motivate the users to switch and continue injecting [28]. Moreover many current heroin smokers also inject depending on the fluctuations of heroin availability [70-72]. Forensic voice analysis has been used in a wide range of criminal cases related to drug dealing and illicit trafficking [73].

Programs to Prevent Drug Abuse

Drug abuse prevention should be made a high priority and the efforts on drug abuse prevention must be an important component of any comprehensive approach which has been undertaken to treat substance abuse. Adolescents and young adults are the more visible groups who are at risk for substance abuse. Efforts should be made to improve their knowledge about drugs by providing adequate education to them. Shaping the attitude of the youth and the promotion of a healthy lifestyle is essential. Thus, the primary

prevention of drug abuse has a key role, which pertains to the avoidance of substance abuse before it has a chance to occur [1].

The International Day against Drug Abuse and Illicit Trafficking is celebrated on June 26th every year. It is an exercise which has been undertaken by the world community to sensitize the people in general and the youth in particular, to the menace of drugs. About 190 million people all over the world consume one drug or the other. Drug addiction causes human distress and it has spawned crime and violence worldwide. Today, there is no part of the world that is free from the curse of drug trafficking and drug addiction. India too has been caught in this vicious circle of drug abuse, and the numbers of the drug addicts are increasing day by day [30].

A Narcotic Drugs and Psychotropic Substances (NDPS) Act was passed in 1985 and it was amended in 1989. In 1999-2000, the Ministry of Social Justice and Empowerment, along with the United Nations office for Drugs and Crime, undertook for the first time, a major national study on the extent, patterns and the trends of substance abuse in the country, a major component of which was a national household survey [74].

Preventative science postulates that negative health outcomes, including those resulting from substance abuse, can be prevented by reducing risk factors and enhancing protective factors. [33] Research presented by the National Institute of Drug Abuse (NIDA) and emphasizes the strategy of targeting modifiable risk factors and enhancing protective factors through family, school and community prevention programmes can be helpful in effective way to deal with current problem of drug abuse.

Botvin et al., [75] cited several key factors required in prevention programs to make them effective. These factors include a need to address multiple risk and protective factors, provide developmentally appropriate information relative to the target age group, include material to help young people recognize and resist pressures to engage in drug use, include complete personal and social skills training to build resistance, deliver information through interactive methods and cultural sensitivity that includes relevant language and audiovisual content familiar to the target audience [36]. Successful prevention programs should incorporate all of these characteristics and can then be provided through the family, school, community or healthcare community.

The 2010 National Institute on Drug Abuse (NIDA) Report [31] emphasized both the role of family and community prevention programs as essential to deterring child and adolescent substance abuse. Their findings are summarized below. Family prevention programmes: The NIDA report emphasizes strengthening protective factors through the family, including increasing family bonding and using appropriate discipline. The following family characteristics place children at a higher risk for substance abuse: parent with a history of alcoholism and drug abuse, high levels of family conflict, lack of and/or inconsistent parental discipline. It follows that eliminating these risk factors can reduce the risk of a child/adolescent abusing drugs and alcohol. Once these risk factors are identified, families may benefit from formal prevention programs that can focus on enhancing family bonding, parenting skills (including communication, rule-setting, appropriate disciplinary actions) and changing parental behaviours that may place a child at risk for later abuse [31].

One example of a family prevention/treatment programme is multi-dimensional family therapy (MDFT). This is a comprehensive family-based outpatient or partial hospitalization (day treatment) program for

substance-abusing adolescents and those at high risk for continued substance abuse and other problem behaviors. MDFT focuses on helping youth develop more effective coping and problem-solving skills for better decision-making and helps the family improve interpersonal functioning as a protective factor against substance abuse and related problems. *Liddle et al.*, [76] compared multi-dimensional family therapy with individual cognitive behavioural therapy (CBT) and found that although both treatments were promising, MDFT was more efficacious in treating substance use problem severity, in addition to creating more long lasting effects than standard CBT.

Community and school prevention programmes: In addition to family programmes, NIDA emphasizes school and community programmes as being beneficial in substance abuse prevention. The report also suggested that introducing programs at an early-age (pre-school/first grade) to address risk factors for later substance abuse, such as early aggression, poor social skills and academic difficulty.

One of the many examples of school prevention programs cited in the NIDA report [33] is Reconnecting Youth (RY); a school-based prevention programme for high school students with poor school achievement and a potential for not completing their education. Participants may also show signs of multiple problem behaviors, such as substance abuse, depression, aggression, or suicidal behaviors. Students are screened for eligibility and then invited to participate in the programme. The programme goals are to increase school performance, reduce drug use, and learn skills to manage mood and emotions. RY blends small group work (10-12 students per class) to foster positive peer bonding, with social skills training in a daily, semester-long class. Early experiments have shown that participation in RY improved school performance (20% improvement in grade point averages), decreased school dropout, reduced hard drug use (by 60%), and decreased drug use control problems, such as progression to heavier drug use [77,78].

Role of healthcare providers in prevention: It is believed that less than 30% of primary care providers perform any screening for substance abuse and as many as 69% do not offer any type of counselling [79]. *Hallfors et al.*, [80] cited the following barriers affecting the screening and prevention services in primary care: lack of tested screening tools, lack of knowledge, skills and confidence, financial disincentives (third party services for covering prescription abuse vary widely); and lack of follow up services and resource limitations.

Efforts from paediatricians and primary care providers to overcome these barriers can assist in identifying substance abusers and eventually lead to their treatment. Advancement of technology and forensic department is very useful to detect drug crime. Past drug use can be detected from nail and hair. Methamphetamine, amphetamine, cocaine, and opiates have been detected in forensic cases [81,82].

Conclusion

There is a requirement to develop a practicable substance abuse preventive programme and a wide-ranging data base on substance abuse among adolescents. Programs should be instituted to introduce the subject of substance abuse into the school syllabus and the formation of youth social clubs to fight against substance abuse. The abuse and illicit trafficking of alcohol and other drugs has resulted in noteworthy morbidity and mortality amongst adolescents worldwide. Many of these youth will lose their lives to drugs and alcohol and a

significant number are likely to grow up to become problem drug users. Although, the substance abuse problem is complex and large in magnitude, there is a substantial amount of evidence-based research available to physicians, community leaders and schools to implement interventions that can decrease adolescent substance abuse rates. Because this issue is not peculiar to any one community or culture, we recognize that individual interventions may not be universally effective. Therefore, we emphasize the strategy of targeting modifiable risk factors and enhancing protective factors through family, school and community prevention programmes, as a generalized framework for healthcare and community activists to use when researching programmes and strategies best suited for their own community.

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